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The Sociocultural Role of *Tungka* in the Sustainability of Beef Cattle Farming

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The *Tungka* system represents a traditional livestock partnership in Sinjai Regency, South Sulawesi, grounded in oral agreements, mutual trust, and kinship between farmers (*pattungka*) and investors (*mattungka*). This study aimed to examine its implementation, evaluate its socio_cultural sustainability, identify key influencing factors, and explore managerial implications. A qualitative approach was employed, integrating thematic analysis and Multiaspect Sustainability Analysis (MSA). Results revealed that *Tungka* remains in practice, with farmers responsible for livestock management and investors providing capital and operational costs. Two profit_sharing models were identified: breeding_based and calf_sale_based. The MSA generated a sustainability index of 63.36%, categorizing the system as moderately sustainable. To strengthen long_term viability, improvements are necessary in investor monitoring mechanisms, the establishment of clear loss_sharing arrangements, and increased supervision frequency. These measures are crucial for preserving *Tungka* as a resilient local institution supporting smallholder beef cattle farming.

Keywords: Rural livestock economy, informal partnership, cultural governance, livestock ownership, rural finance, social sustainability, sustainability assessment.

INTRODUCTION

Partnerships in livestock farming play a crucial role in strengthening relationships between large_scale agribusiness enterprises and smallholder farmers, particularly in improving business capacity, access to technology, funding, and market security for livestock products. Through such partnerships, a mutually beneficial and sustainable process is expected to take place, fostering the empowerment of farmers within the agribusiness value chain.

This practice is explicitly regulated under the Regulation of the Minister of Agriculture of the Republic of Indonesia Number 13/PERMENTAN/PK.240/5/2017 on Livestock Business Partnerships. The regulation defines these partnerships as cooperative relationships between livestock business actors, based on principles of mutual necessity, reinforcement, benefit, respect, responsibility, and interdependence. One of the models outlined in the regulation is the profit_sharing system, which refers to partnerships between farmers—or between farmers and companies—where livestock cultivation is financed or owned by livestock companies or enterprises from other sectors.

The profit_sharing system in beef cattle farming has long been adopted by farmers in Indonesia as a traditional partnership model rooted in cultural values and local wisdom. This system has evolved dynamically across various regions, with differing terminology, mechanisms, and social norms that essentially reflect adaptations to local customs and traditions. In Aceh Province, the traditional profit_sharing model is known as mawah (Jannah & Jafar, 2018), while in North Sumatra it is referred to as maro (Putra, 2021). On Java Island, it is known as gaduh (Efendi et al., 2021), in Bone Regency as teseng (Rohani et al., 2018), and in Gowa Regency as tesang (Darmanita & Muin, 2016). In Sinjai Regency, South Sulawesi Province, Indonesia, a similar partnership model is known as *tungka*, which plays a crucial role as a primary alternative for small_scale farmers to overcome capital constraints.

Tungka is not merely an economic strategy but also represents socio cultural values, as it provides livestock ownership opportunities for communities with limited resources, expands economic prospects, and strengthens social relationships within society (Hasibuddin, 2023; Siradjuddin, 2017). The *Tungka* system is implemented by two parties:

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pattungka (farmers) and *mattungka* (investors), based on principles of trust, kinship, and customary norms that have been passed down through generations without formal written agreements (Sanjaya, 2015). Farmers engage in *tungka* as a means of securing capital for livestock farming and increasing their herd size. For investors, *tungka* serves as a mechanism to support farmers facing financial constraints, while also functioning as an emergency fund, investment opportunity, additional income source, and a method to expand livestock ownership (Hasibuddin, 2023; Siradjuddin, 2017).

The implementation of the tungka system faces various challenges in the current era of modernization. The wave of modernization, accompanied by shifts in business actors' mindsets, has altered the paradigm of traditional partnerships, both in perception and implementation. The absence of formal written agreements and weak supervisory mechanisms creates uncertainty in the profit sharing system, potentially leading to disharmony in relationships between the involved parties. This situation underscores the urgency of conducting research on the sustainability of the *tungka* system from a socio cultural perspective. While studies on the structure, mechanisms, and contributions of partnership systems to strengthening smallholder livestock enterprises have been widely conducted, specific discussions examining *tungka's* sustainability from social and cultural aspects remain limited. This study aims to describe the implementation of the *tungka* system in increasing the beef cattle population, evaluate the sustainability status of *tungka*, identify factors influencing its sustainability, and examine its managerial implications from a socio_cultural perspective.

MATERIALS AND METHODS

***Sources of Data*:** This study was conducted in Sinjai Regency, South Sulawesi, Indonesia, covering four districts: Tellulimpoe, South Sinjai, East Sinjai, and Central Sinjai. The locations were purposively selected based on the high beef cattle population and the active implementation of the traditional partnership system (*tungka*). This qualitative study aims to describe the implementation of the Tungka system and assess its sustainability status from a socio cultural perspective. Data were obtained from statements provided by informants directly involved in the Tungka system.

The data collection methods used in this study are as follows:

1. Direct observation of *Tungka* partnership practices in the field.
2. In depth interviews with 25 key informants, including farmers (*pattungka*), investors (*mattungka*), and academic.
3. Literature review of scholarly sources, institutional documents, and previous research findings.

***Population and research sample*:** Sampling was conducted using Rapid Assessment Procedures (RAP) through purposive selection of 25 key informants, comprising farmers (*pattungka*), investors (*mattungka*) with ≥5 years of experience in the Tungka system, and academics specializing in the socio_economic aspects of livestock farming.

***Data analysis*:** The data analysis methods employed in this study include Thematic Analysis and Multiaspect Sustainability Analysis (MSA), utilizing the RAP *Tungka* Partnership approach.

- Thematic Analysis is a qualitative method used to identify patterns or themes within the data (Braun & Clarke, 2006). This approach effectively reveals connections between phenomena and provides an in_depth explanation of their implementation (Fereday & Muir_Cochrane, 2006), serving as a crucial foundation for qualitative analysis (Holloway & Todres, 2003). In this study, Thematic Analysis was applied to analyze interview data consisting of narratives and informant statements. Several quotes were transcribed verbatim in their original language (Bugis) and subsequently translated into Indonesian while preserving contextual and cultural meaning. The analytical process involved: (1) comprehending the obtained data, (2) coding the information, and (3) identifying emerging themes.
- Multiaspect Sustainability Analysis (MSA) is an evaluation method used for planning and assessing sustainability based on Rapid Appraisal Process (RAP) principles. In this study, MSA was utilized to evaluate the sustainability status of the *tungka* system from a socio_cultural perspective and to identify influencing factors for future strategic planning (Firmansyah, 2022). The analysis began by defining relevant factors through in_depth interviews and literature review. Fourteen socio_cultural factors were selected as assessment indicators. Each factor was assigned a score based on its impact on sustainability, with higher scores indicating positive contributions and lower scores representing challenges. The obtained scores were analyzed using Exsimpro software to determine:
  - Socio_Cultural Sustainability Status, determined through index calculations.

$$y = \frac{y_{f1} + y_{f2} + y_{f3} + y_{f4} + \cdots + y_{fn}}{y_n} \times 100\% = \frac{\Sigma y_{fn}}{f_n}$$

$$y_{fn} = \frac{M_o . f_n}{G_{fn}}$$

Where: y = aspect status value, y_f = aspect factor, M_o = modus value on factor, G = the highest score (good) on the factor of the indicator assessment, f = Factor value

  - Leverage Factors, referring to the most influential factors affecting changes in sustainability status.

$$L = S_M + S_V$$

$$S_M = \frac{1}{G_{fn}}$$

$$S_V = (Gfn - M_o f_n) \times S_M$$

Where: L = leverage factor value, S_M = sensitivity maximum, S_V = sensitivity maximum, M_o = modus value on factor, G = the highest score (good) on the factor of the indicator assessment, f = factor value

- Verification and Validation of Assessment, conducted by comparing actual results with random iterations; a maximum deviation of 5% is considered acceptable.

$$V_s = ABS\,(y_{RI} - y_n)$$

$$E_r = \frac{SI_f}{5}$$

Keterangan: V_S = Validation Status, y_{RI} = status value based on random iteration, y_n = number of aspect, E_r = Estimation Respondent Error

- Sustainability status is categorized based on an index scale of 0-100 as follows:

Table 1. Sustainability status values

Status Value Criteria	Category
0-25	Unsustainable
>25-50	Low Sustainable
>50-75	Sustainable
>75-100	Very Sustainable

RESULTS

Implementation of Tungka Sapi Potong in Sinjai Regency (Table 2)

Table 2. Implementation of *Tungka* Sapi Potong in Sinjai Regency .

Code	Livestock Caretaker *(Pattungka)*	Livestock Owner (*Mattungka*)
Origins of *Tungka*	**Bugis Language (Verbatim):** *"Maittana mattungka syafi, w:aktuna mupi biccuka engka memengni syafinna afakku natungka fole cikalikku… de kuissengi magaro biasa intinna nenekna nenekku mattungka memengni syafi"- Pak U* **English language:** I have been raising cattle for a long time, even since childhood. The *Tungka* system has existed for generations—originally, my father's cattle came from his cousin. Although I do not know the exact origins of *Tungka*, I am aware that this practice has been carried out since the time of my great_grandparents. - Mr. U • The *tungka* system has existed since the era of the ancestors. • There is no formal documentation about when the system began.	**Bugis Language (Verbatim):** *"Riolo engka tao mega sapinna. Riolo sapi di pakei maddangkala di galunge. Riwektu galungeng, engka sitampe galungna degaga sapinna. Jaji napirengi sapi na tungkai, na pakai tomi manddangkala, gangkannan sapie ro memmanak. Iyaro indo' sapie memanak, na pauwangi punnana. Makkadai punnana tiwiki mai anakna, memmanaki pemeng Tawana tosi pattungkae. Makkoni ro na napeliara lettu kokkoro. Makkoni ro asal mulana ekka mappatungka sapi." Pak AK* **English language:** In the past, there was a person who owned many cattle. These cattle were used for plowing rice fields during the planting season. One day, a neighbor who had no cattle asked to borrow one for plowing. After being used, the cattle were not immediately returned but continued to be cared for until they became pregnant and gave birth. Once the calf was born, the caretaker informed the owner. The owner then stated that the first calf should be returned to them, and if the cow gave birth again, the next calf would belong to the caretaker. Since then, cattle have been raised under this arrangement, which came to be known as the *tungka* system. - Mr. AK • The practice dates back to ancestral times. • It originated as a form of cattle lending for plowing purposes • It is based on mutual assistance among farmers
Main Actors in the *Tungka* System	*I just take care of the cattle, Mr. S..." —Mr. R* • The *Tungka* system consists of two primary actors: farmers (*pattungka*) and investors (*mattungka*).	*"In Tungka, only the farmer and the cattle owner are involved; no one else has a say—not farmer groups, not the government." - Mr. S* • This statement reinforces the notion that *Tungka* operates as a direct partnership exclusively between farmers and investors, without external intervention.
Motivation Behind the *Tungka* System	*"I would rather engage in Tungka for cattle than take money from the bank…..no need for initial capital." — Mrs. A* • Initial Capital for Livestock Farming *"I have been practicing Tungka for a long time. Initially, I raised Mr. X's cattle because I did not have the money to buy my own. Thankfully, I now own three cattle and plan to add more. Originally, I had five, but I sold two to pay for my child's education and renovate my house." —Mr. MI* • Alternative for Increasing Livestock Population • Family Welfare *"I raise Mr. S's cattle because he is a respected figure in this village. No one dares to cause trouble, so my cattle are automatically safe." - Mr. R* • The relationship ensures security.	*(a)..... "As my cattle increased, finding enough grass became more difficult. So, I started entrusting them to family members or trusted neighbors for care." —Mr. S* • Limitations in Time, Labor, and Forage Availability • Investment *(b) ..... "I chose to support farmers through the Tungka system because I noticed that many of their children did not continue their education. Most only completed elementary school, which I found heartbreaking. In 2001, I started providing cattle to farmers, asking them to take good care of them. If their cattle had offspring, I simply advised them to use the calf to fund their child's education." —Mr. T* • Supporting Farmers' Children's Education • Long_Term Social Investment

Code	Livestock Caretaker *(Pattungka)*	Livestock Owner (*Mattungka*)
	• Reflects the status and social influence of the investor.	
Kriteria Pemilihan Mitra	*"I raise Mr. H's cattle because he is willing to provide them, and I have been taking care of his cattle for a long time. We also have a family connection." —Mr. MI* • *A* partner willing to provide Tungka cattle • Selecti*ng a partner based on familiarity and family ties*	*"It is very apparent—farmers who truly care about their cattle will take good care of them. I usually entrust my cattle to farmers who have a strong passion for livestock, who genuinely love and care for their cattle. They treat them as if they were their own children. They collect grass every morning, build shelters, monitor their health, and check for flies. However, finding a farmer who is truly committed to raising cattle is challenging, so it is important to assess them first. I usually ask their neighbors about how they care for their cattle." —* Mr. S • Farmers who genuinely care for and nurture their cattle • Possess a strong passion for livestock and a deep attachment to their cattle • Attend to their cattle's daily needs • Responsible and trustworthy
Prinsip_prinsip Kemitraan	**Bugis Language (Verbatim):** *"maittana mattungka syafi, kekeluargaanmi .... - Pak SW* **English language:** *"I have been practicing Tungka for a long time, and the system operates based on familial principles." - Mr. SW* • Kekeluargaan	*"Even though many people are willing to raise my cattle, I prioritize those who need them the most. In fact, if someone else took care of them, my cattle would be in better condition. But I offer them to help, especially elderly farmers. The important thing is that they are willing to raise them." —Mr. S* • Social Responsibility • Family_Based Support • Prioritizing the Vulnerable • Mutual Cooperation and Solidarity *.... "I have started entrusting my cattle to family members or trusted neighbors for care." —Mr. H* • Trust
Pola bagi hasil	*"Nowadays, farmers prefer to divide the calf immediately rather than wait for the second offspring for profit_sharing. This is because if the first calf is male and the second is female, it would not be fair." —Mr. R* • Calf Profit_Sharing Pattern in the Tungka System	*"Usually, if I give a mature cow (to the farmer), I take the first calf. If I give a heifer (to the farmer), the farmer gets the first calf. It all depends on the agreement."* • Breeding Pattern in the Tungka System
Motivation for Choosing Profit_Sharing Patterns in the Tungka System	*"Nowadays, farmers prefer to divide the calf immediately rather than wait for the second offspring for profit_sharing. This is because if the first calf is male and the second is female, it would not be fair." —*Mr. R • Fairness in profit_sharing • Time efficiency and economic value *"The cattle owner usually determines the distribution system..." —Mrs. J* • Owner's dominance in decision_making	*"I currently have around 250 cattle. My system is to only profit_share the offspring so my cattle population keeps growing every year." —Mr. S* • Profit_sharing of calves (*pedet*) to increase the livestock population *"If I return the cattle to the farmer, they decide whether to profit_share or sell it. Usually, if the farmer urgently needs money, they just sell it, since they know best." —Mr. H* • Flexibility in profit_sharing patterns • Responsiveness to farmers' financial needs
Challenges and Issues in the Tungka System	*"I returned the cattle because the farmer wanted to exchange my calf with theirs. However, their calf was female, and they never mentioned it beforehand." —Mr. SY* • Ethical Violations in Partnership • Unfair Behavior by Investors	*("Once, I was deceived by a farmer who had been raising my cattle for a long time. They swapped my share of the calf with their own because my calf was male, and they replaced it with a female calf." —Mr. S* *"Since the farmer raising my cattle lived far away, I never checked on them. Suddenly, I found out that my cow had given birth, and the calf was secretly sold." —Mr. T* • Ethical Violations in Partnership • Dishonest Behavior by Farmers
Conflict Resolution in the Tungka System	*"I just let them take the cattle back because discussing it would only lead to more arguments. The owner was already upset, and it was unpleasant to hear. I didn't want the stress, so I chose to back down and told them to retrieve the cattle from my house." —Mr. SY* • Resolving conflicts through compromise and peace	*"Since I already knew their behavior, I never gave them my cattle again. I simply asked for my cattle back—there are many others willing to raise them, or I could just sell them directly. They clearly swapped my cattle but refused to admit it." —Mr. S* • Termination of partnership • Social sanctions due to loss of trust *"Issues like this are usually resolved within the family. The government is not involved, except in cases where the conflict cannot*

Code	Livestock Caretaker *(Pattungka)*	Livestock Owner (*Mattungka*)
		be settled, in which case family members or respected figures in the village, like the head of the neighborhood (Pak RT), help mediate. But this kind of problem rarely happens." —Mr. H • Family_based conflict resolution • Mediation by community leaders
Monitoring and Communication in the Tungka System	*"Mr. S usually comes here to check on the cattle, but there is no fixed schedule—he usually stops by in the late afternoon." —Mr. R* • Visits occur spontaneously *... "Sometimes, the cattle owner just calls instead of visiting, except when the cattle are giving birth or about to be sold." —Mrs. A* • *Communication is primarily conducted via phone* • *Visits are situational*	*"When I give cattle, I monitor them closely. Every morning, I go around checking. Sometimes, I make surprise visits to see the cattle directly in their enclosures. I also have one or two informants in each village where I have cattle—no one knows who they are. Their job is to update me if anything happens. I also ask if the farmers are properly taking care of my cattle because some farmers raise them carelessly, which is risky. If a cow dies, farmers will never replace it, so I have to be cautious. There was once a case where my share of the calf was secretly sold and replaced with a low_quality one. Thankfully, my informant knew about it. That's why informants are crucial. I also give them a commission every time I sell cattle—the amount depends on the number sold, ranging from one to three million rupiah." —*Mr.S • Secret third_party monitoring • Random direct visits by investors *"I regularly visit farmers' homes every Sunday when I am not teaching—it is also a chance to strengthen relationships. Sometimes, farmers need supplies like cattle ropes or salt, which I provide. Otherwise, they come to my house to ask for assistance." —*Mr. T • Scheduled investor visits • Monitoring as a means of social bonding • Monitoring to fulfill farmers' needs
Duration of Partnership in the Tungka System	*"When the farmer brought the cattle, they only mentioned the profit_sharing arrangement but never specified the duration." —Mr. SL* • Duration of partnership is not stated	*"It depends on the farmer how long they want to raise the cattle. If they no longer wish to continue, they usually just inform me. For example, if the cattle cannot conceive, I will replace them." —Mr. C* • No fixed duration for cattle care • Farmers *determine the length of the partnership*
Cost Responsibility in the Tungka System	*"The investor covers all expenses, including insurance and medication." —*Mr. SW • **Costs are borne by the investor**	*"Farmers call if they need anything, usually using their own money first, and I reimburse them later. Sometimes, I bring the necessary supplies directly." —*Mr. T • **Costs are borne by the investor**

***Socio cultural sustainability status of the traditional partnership system (Tungka) in beef cattle farming in Sinjai Regency*:** The sustainability analysis of Tungka beef cattle farming in Sinjai Regency, focusing on socio_cultural aspects, is based on several key factors: the tradition of Tungka within families; the level of family involvement in the implementation of this system; conflict resolution between investors and farmers; the practical implementation of Tungka agreements between investors and farmers; the frequency of investor monitoring of farmers; the form of investor oversight over livestock; the rules for sharing livestock losses; resolution mechanisms when livestock die or go missing; the level of trust in Tungka partners (investors/farmers) at present; perspectives on the necessity of written agreements in partnerships; concerns regarding fraud in cooperation; the quality of current Tungka partnership relations; perspectives on the future continuity of the Tungka system; and conflicts between investors and farmers. The results of the sustainability index analysis for the socio-cultural aspects of Tungka beef cattle farming in Sinjai Regency indicate a sustainability score of 63.36%, categorizing the system as moderately sustainable. However, projections suggest a potential decline, with a future sustainability value of 51.79%.

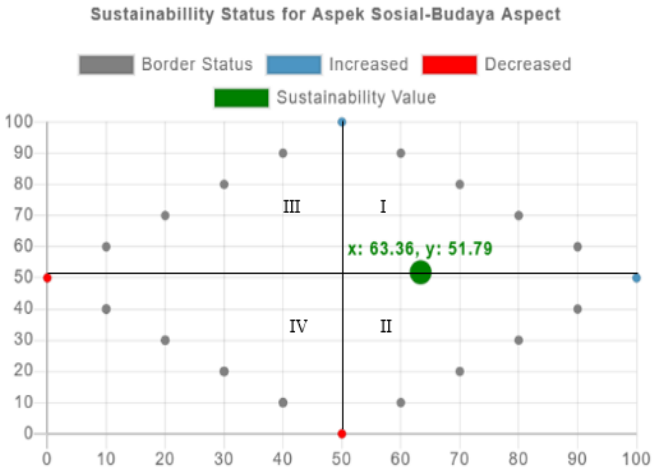

Figure 1. Sustainability status of socio cultural aspects.

Regarding socio-cultural aspects, the MSA analysis results indicate that among the 14 influencing factors, most fall under Priority 2, without significant differences in sensitivity. To ensure consistency in analysis while identifying the three most sensitive factors, the researchers employed a qualitative approach based on field observations and interviews.

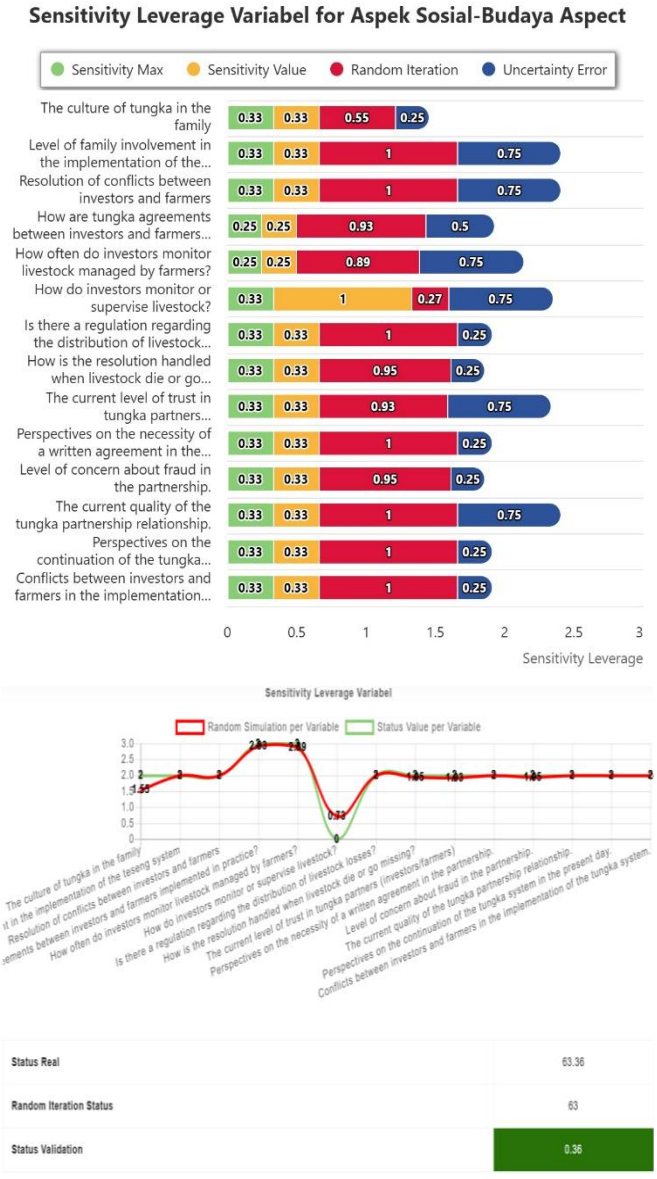
Sensitivity Leverage Variabel for Aspek Sosial-Budaya Aspect
Sensitivity Max
Sensitivity Value
Random Iteration
Uncertainty Error
The culture of tungka in the family
Level of family involvement in the implementation of the...
Resolution of conflicts between investors and farmers
How are tungka agreements between investors and farmers...
How often do investors monitor livestock managed by farmers?
How do investors monitor or supervise livestock?
Is there a regulation regarding the distribution of livestock...
How is the resolution handled when livestock die or go...
The current level of trust in tungka partners...
Perspectives on the necessity of a written agreement in the...
Level of concern about fraud in the partnership.
The current quality of the tungka partnership relationship.
Perspectives on the continuation of the tungka...
Conflicts between investors and farmers in the implementation...
0.33 0.33 0.55 0.25
0.33 0.33 1 0.75
0.33 0.33 1 0.75
0.25 0.25 0.93 0.5
0.25 0.25 0.89 0.75
0.33 1 0.27 0.75
0.33 0.33 1 0.25
0.33 0.33 0.95 0.25
0.33 0.33 0.93 0.75
0.33 0.33 1 0.25
0.33 0.33 0.95 0.25
0.33 0.33 1 0.75
0.33 0.33 1 0.25
0.33 0.33 1 0.25
0 0.5 1 1.5 2 2.5 3
Sensitivity Leverage
Sensitivity Leverage Variabel
Random Simulation per Variable
Status Value per Variable
Status Real
63.36
Random Iteration Status
63
Status Validation
0.36

Figure 2. Sensitivity leverage variable.

Based on Figure 2, the most sensitive factors influencing the sustainability of the Tungka system in beef cattle farming in Sinjai Regency from the socio_cultural aspect are the form of monitoring or supervision carried out by investors over the livestock, the rules governing the distribution of livestock losses, and the frequency of monitoring or supervision.

Table 3. Priority factors affecting the socio cultural aspect

No.	Name Factor	Priority
1	What is the form of monitoring or supervision conducted by the livestock owner over the livestock?	1
2	Is there a regulation regarding the distribution of livestock losses?	2
3	How frequently does the livestock owner monitor the livestock managed by the caretaker?	3
4	How is the implementation of the tungka agreement between the livestock owner and caretaker practiced?	4
5	How are cases handled when livestock die or go missing?	5
6	What is the quality of the current cooperative relationship within the tungka system?	6
7	What is the level of family involvement in the implementation of the teseng system?	6
8	What is the current level of trust toward the tungka partners (livestock owner/caretaker)?	7
9	What is the level of concern regarding fraud in the cooperation?	8
10	How are conflicts between the livestock owner and caretaker resolved?	9
11	Conflicts between livestock owners and caretakers in the implementation of the tungka system	10
12	The culture of tungka within the family	11
13	Views on the need for written agreements in the partnership	12
14	Views on the sustainability of the tungka system at present	13

DISCUSSION

***Implementation of the traditional cattle partnership System (Tungka) in Sinjai Regency*:** The implementation of the Tungka system in beef cattle farming in Sinjai Regency represents a traditional partnership that has been passed down through generations. Informants indicate that this practice has been in place since the time of their ancestors, even before they were born. Initially, the system emerged from community habits of mutual assistance, particularly in farming activities such as plowing rice fields. When someone lacked cattle for plowing, cattle owners would lend their animals. These borrowed cattle were not returned immediately but were raised until they gave birth, at which point the offspring were divided based on mutual agreement. Over time, this system evolved and became known as *"Mattungka Sapi,"* derived from the root word "Tungka," which remains the foundation of the *tungka* practice today.

The Tungka system involves two primary actors: the farmer (*pattungka*), who raises the cattle, and the investor (*mattungka*), who owns the livestock. No third parties, such as farmers' groups or the government, are involved in the Tungka system. The interaction is limited to two individuals bound by trust and oral agreements. Farmers (*pattungka*) generally receive cattle from investors (*mattungka*) due to

limited financial resources, and the *tungka* system serves as an alternative solution, preventing them from taking interest-based loans from banks. For most farmers, *tungka* not only provides an opportunity to raise cattle without capital but also serves as a means of improving household welfare, funding children's education, and fulfilling other essential needs

Tungka, or shared cattle farming, is a system of profit-sharing between livestock owners and farmers in Indonesia. It is based on trust and oral agreements, with no formal contracts or third-party involvement (Sanjaya, 2015; Syahrani et al., 2024). This system enables financially constrained farmers to raise cattle without taking bank loans (Sanjaya, 2015). Profit sharing typically involves dividing the offspring or equally distributing sales proceeds between the owner and the farmer (S. Sanjaya, 2015; Syahrani et al., 2024). The primary factors motivating farmers (Pa' Tesseng) to participate in profit sharing include the lack of initial capital, the desire to own livestock, economic demands, family requests, and additional income opportunities (Zainabriani et al., 2017).

For investors, the motivation for entrusting cattle is not solely economic. Some express that social considerations are a primary factor, particularly in supporting farmers facing financial difficulties. The system is also utilized as a long_term investment strategy and a solution for livestock owners who have limited time or resources to manage cattle directly. As the number of cattle increases, they are entrusted to individuals deemed capable and trustworthy, often within the family or neighborhood.

The *Tungka* system serves multiple purposes beyond economic motivation. It acts as a long_term investment strategy and a solution for owners who lack the time or resources to manage cattle directly (Amam, 2021). The primary factors driving investors (Pa'teseng) to engage in the profit_sharing system (*Teseng*) include limited time for livestock care, the desire to help, the pursuit of profit, the absence of land, and an excessive number of cattle. Social considerations play a significant role, particularly in supporting farmers with limited resources (Simatupang - *et al.*, 2016). The system is reinforced by cultural values, such as *karmaphala* in Bali, making it preferable to modern partnership models due to its fairness, cooperation, and transparency (Simatupang et al., 2016).

Trust is a fundamental aspect of the process of selecting a *tungka* partner. Investors tend to choose farmers they are familiar with, have kinship ties with, and demonstrate strong care for livestock. Farmers who are considered to have strong livestock management skills are characterized by consistent animal care, attention to livestock health, and proper maintenance of enclosures. Oral agreements form the basis of these partnerships, making social and ethical indicators the primary criteria for selecting a partner. This aligns with the view of Zainabriani et al. (2017), who state that the Teseng profit_sharing system is beneficial for both parties, as it eliminates complex administrative requirements and is rooted in mutual trust between the owner and the farmer. A similar perspective is presented by Efendi (2018), who emphasizes that oral agreements in livestock partnerships make social and ethical considerations the main criteria for partner selection.

Relationships in the *tungka* system are founded on family principles and social solidarity. Many investors prefer to entrust their cattle to those in need, even when more experienced farmers are available. This reflects a commitment to supporting vulnerable groups and strengthening the spirit of community cooperation to ensure the sustainability of the *tungka* system. This is consistent with Wati and Listyaningrum (2022) who state that social solidarity in traditional farming communities is realized through cooperation and mutual assistance, which play a crucial role in strengthening social relationships and preserving local traditions.

The *tungka* agreement is established flexibly through mutual understanding, though in most cases, *mattungka* (the investor) proposes the profit_sharing model to *pattungka* (the farmer). In Sinjai Regency, the *tungka* system employs two primary profit_sharing models. The first is the breeding model, where *mattungka* provides a breeding cow to *pattungka*, and the first calf belongs to *mattungka*, the second to *pattungka*, and so forth. However, if *pattungka* receives a heifer, the first calf belongs to *pattungka*, the second to *mattungka*, and the cycle continues. The second is the profit sharing model, where the first calf is raised by *pattungka* for a specific period, and then the cattle are sold with the proceeds split evenly at 50% for both *pattungka* and *mattungka*. This aligns with Puspitasari (2014), who explains that livestock business partnerships often follow different profit sharing arrangements, including agreements where cattle are entrusted to an individual for a certain period to be raised and later sold, with profits divided accordingly. Alternatively, profit sharing may involve estimating the initial and final value of livestock, distributing gains or losses, or selling offspring and splitting the profits.

The *Tungka* system remains in practice, though minor conflicts occasionally arise, such as discrepancies in profit_sharing execution, dishonesty in birth reporting, or unauthorized calf substitution. Both farmers and investors have faced unethical actions from their partners. Conflict resolution is typically handled within family structures, but if no agreement is reached, investors usually retrieve their cattle or terminate the partnership. In special cases, resolution efforts involve family members or respected community leaders, such as neighborhood heads (RT), village leaders (RW), or livestock group representatives. Nevertheless, third_party mediation is rarely necessary, as familial conflict resolution is generally prioritized.

This finding is consistent with Rizka et al. (2022), who describe that traditional cattle profit_sharing agreements under the Nguwan practice rely solely on mutual trust, without formal written contracts. As a result, any changes to the agreement over time may disadvantage one party.

Additionally, many investors and farmers lack clarity in tracking expenses, leading to imbalances in profit_sharing that could affect family members continuing the Nguwan cattle tradition, especially if one party passes away. Another recurring issue is that investors entrust cattle to farmers for care, yet retain full rights over sales, while farmers are granted only management responsibilities. Furthermore, there is uncertainty regarding responsibility for livestock losses, particularly in cases of cattle mortality.

Monitoring is crucial for *mattungka* to prevent miscommunication and conflicts. Generally, monitoring is unstructured, such as casual inquiries about cattle conditions when encountering *pattungka* or neighbors. Supervision is often conducted via phone calls, while direct visits occur during key events, including cattle pregnancy, birth, illness, sales, or significant disputes requiring resolution. Several *mattungka* who have successfully sustained the *Tungka* system and generated significant earnings attribute their success to consistent monitoring, effective communication, and leveraging social capital within the community.

This observation aligns with Munthe (2018), who suggests that livestock owners conduct regular inspections of cattle enclosures to ensure adherence to initial agreements and verify cattle conditions. Studies on traditional profit_sharing models indicate that livestock partnership systems yield notable social and economic benefits when financial management and monitoring are optimized (Saqib & Zafar, 2020). Traditional profit sharing requires systematic supervision and risk mitigation, whether structured or unstructured. Profit sharing and risk management have become critical considerations, necessitating clear pre pre-established agreements to ensure fairness throughout the partnership (Nomani & Azam, 2020).

***Social and Cultural Sustainability Status of Traditional Partnership_Based Beef Cattle Farming (Tungka) in Sinjai Regency*:** Te socio_cultural sustainability of the *Tungka* system shows a sustainability index of 63.36 (Existing), indicating that it falls within the sustainable category. However, to enhance its sustainability, improvements are required in several sensitive factors, including the monitoring and supervision mechanisms implemented by investors, the rules governing the distribution of livestock losses, and the frequency of monitoring/supervision.

The monitoring and supervision mechanisms applied by investors are identified as a priority factor that must be addressed to ensure the continued sustainability of the *tungka* system. This is reflected in the sensitivity value (orange) of 1.00 and a sensitivity maximum (green) of 0.33. The type of supervision varies depending on trust levels, the number of livestock owned, and the investor's capacity for monitoring. Generally, investors conduct monitoring indirectly, using telephone communication, text messaging, or inquiries about livestock conditions through neighbors or farmers' family members.

Research findings indicate that in larger scale *tungka* systems, some investors involve third parties assigned specifically to oversee livestock management. Although the presence of third_party monitors is generally confidential, farmers are aware of their role. This form of monitoring is regarded as more effective in preventing fraud, ensuring adherence to agreements, and strengthening trust between investors and farmers, thereby fostering the long_term sustainability of the *Tungka* system. Despite being a traditional practice, adopted monitoring strategies align with livestock partnership principles outlined by the Directorate General of Livestock and Animal Health Services in the Handbook on Livestock Business Partnership (2022). This document emphasizes that monitoring is a process of observing partnership implementation to ensure proper collaboration between farmers and investors, which can be conducted either directly or indirectly.

Another sensitive factor is the rules governing the distribution of livestock losses, with a sensitivity value of 0.33 and a sensitivity maximum of 0.33. This suggests that greater attention should be given to avoiding imbalances or disputes within the *tungka* partnership. Unclear regulations on loss_sharing may trigger conflicts and weaken trust between farmers and investors. Consequently, establishing transparent and mutually agreed_upon loss_sharing rules at the beginning of the partnership is crucial to ensuring fairness and sustainability within the *tungka* system. This aligns with Rusanti and Sofyan (2023), who state that profit_sharing and risk management must be carefully defined from the outset of a partnership to prevent financial disadvantages for either party. Therefore, enhancing the quality and consistency of monitoring within the *tungka* system is not only socially and culturally relevant but also serves as a vital risk mitigation strategy to ensure the long_term sustainability of partnerships.

Based on interview findings, the *Tungka* system is generally governed by oral agreements that primarily outline the profit_sharing arrangement, without clear provisions regarding loss_sharing mechanisms or risk mitigation. In cases of livestock loss, such as death or theft, no predetermined actions or responsibilities are agreed upon, resulting in investors bearing the full financial burden. The farmer's role in such situations is purely social, including helping to bury deceased livestock or assisting in search efforts for missing animals, without any structured financial obligation. This lack of clarity can lead to economic losses, weakened investor_farmer relationships, conflicts, and erosion of trust. Given its direct impact on the sustainability of the *tungka* system, this issue demands serious attention.

Another critical factor is the frequency of livestock monitoring, with both sensitivity value and sensitivity maximum recorded at 0.33. This indicates that monitoring requires reinforcement to safeguard the sustainability of *tungka* partnerships. Regular supervision by investors is

essential for maintaining continuous communication, updating livestock conditions, and fostering strong trust between investors and farmers. Sam et al. (2025) emphasize that open and honest communication is fundamental in building trust and ensuring effective collaboration between investors and farmers. In contrast, weak communication can lead to misunderstandings, distrust, and disruptions in coordination and cooperation. Therefore, consistent monitoring, coupled with intensive communication, is key to sustaining the *tungka* system and addressing operational challenges.

Interview findings further indicate that livestock owners rarely plan scheduled visits to farmers. Deliberate direct inspections are almost nonexistent, with interactions often occurring incidentally or limited to urgent matters via phone calls. Investors typically visit farmers only during critical events such as birth, illness, harvesting, or cattle sales, averaging one visit every 3-6 months. This practice results in weak supervision, increased risk of fraudulent activities, and hindered emotional connections between parties. The high level of investor trust in farmers, particularly those with family ties, is identified as a primary reason for minimal monitoring frequency.

Managerial socio cultural implications

- Farmers *(Pattungka)*

Farmers hold the responsibility of maintaining trust within the *Tungka* partnership system, adhering to transparency principles in livestock management and profit sharing processes. Effective communication with investors, whether through phone calls or direct meetings, is expected to strengthen emotional connections and enhance trust between business actors.

- Livestock Owners *(Mattungka)*

Investors must conduct direct visits or random periodic monitoring of livestock. This supervision is not solely for oversight but also serves to build positive emotional relationships with farmers. At a larger scale, investors are advised to engage trusted third parties in a confidential manner to prevent conflicts of interest and ensure the objectivity of livestock management information.

- Government or Community Leaders

Conflicts between farmers and investors in the Tungka partnership system are inevitable. Resolution is typically sought through direct discussions between the two parties. If consensus cannot be reached, third party involvement such as traditional elders, senior family members, or local authorities like RT/RW heads or neighborhood leaders may be considered. Nevertheless, external mediation remains rare in practice, as internal negotiations are usually preferred for resolving disputes.

Conclusion: The findings indicate that the *Tungka* system in Sinjai Regency remains actively practiced by two main parties: farmers (*pattungka*) and investors (*mattungka*), who are bound by oral agreements, trust, and familial relationships. Farmers are responsible for livestock maintenance, while investors provide capital (cattle) and cover maintenance costs. The *tungka* system employs two profit_sharing models: the breeding model and the calf sales profit_sharing model. The socio_cultural sustainability status of the *Tungka* system is classified as sustainable, with a score of 63.36%. However, to preserve and enhance sustainability, improvements must be made in the livestock monitoring mechanisms by investors, loss_sharing regulations, and the frequency of supervision.

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